

Compass: PwC Forward-Looking Blue Arena World

The Future of the Oceans

Finances and Economics – World, January 2020

Growth Rates



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Compass

"Compass – PwC Forward-Looking Blue Arena" is a forward-looking leadership forum about the oceans, organized in the following relevant subjects, ocean leaders express their views about what is expected for the next 12 months (year 2019) on sea activities:

- Governance and Ocean Integrated Approach;
- Finances and Economics;
- Environment;
- Knowledge and Innovation; and
- People, Culture and Identity.

This publication aims to carry out the exercise of calculating the growth rates of the various variables of the economy of the sea, in order to provide the "Compass - PwC Forward-Looking Blue Arena" forum with quantitative information to assist in the debate on Finances and Economics, that will provide clues about the future of the oceans.

The information, calculations, estimates, and projections contained in this document refer to the date of construction of this publication and are subject to change, and PwC does not require any notice to update or revise with respect to such change. Prospective financial information is contingent upon future events that may not occur as expected. Consequently, actual results may be different from those anticipated and variations may be materially relevant.

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Executive Summary

The world economy is estimated to grow by more than 3% in the coming years, due to the expected growth in the developing economies, above 4%, mainly because of the contributions of China (6%) and India (7%). It should be noted that China is expected to have a progressive reduction in the rate of growth.

The world's population will continue to grow at about 1% a year.

By doing the exercise of calculating growth rates for the last five years and for the last year, it is possible to determine a minimum limit and a maximum limit of rates of growth. Below are some comments on the average of the minimum limit and the maximum limit of the growth rate range.

Total world trade in terms of tonnes transported tends to grow above 3%. Taking into account the entries and exits of all ship registers, the expectation of growth in the number of vessels is 1.3%, and in terms of gross tonnage, rate of growth is about 4%.

The growth rate of shipbuilding in terms of gross tonnage compensated tends to be negative, about 5%. If the variable is the number of ships, the growth rate is negative, about 1.4%. Like the development of new shipbuilding, ship dismantling in terms of gross tonnage tends to decrease about 13% per year.

Offshore oil and gas extraction has a growth expectation of more than 1% and installed offshore wind capacity tends to grow around 25% per year.

The consumption of fish in tonnes shows growth expectations of about 2.5% per year. Fishing tends to have negative growth rates of more than 1% and the aquaculture production of aquatic animals tends to grow by more than 4%.

The revenue and number of passengers in the cruise industry tends to grow at more than 4% per year.

International context

World GDP growth, 2019-2022 (annual percentage change)^a

Region/Country	2019 ^b	2020 ^b	2021 ^b	2022 ^b
World	3.3%	3.6%	3.6%	3.6%
Developed countries	1.8%	1.7%	1.7%	1.6%
of which:				
Japan	0.1%	0.5%	0.5%	0.5%
USA	2.3%	1.9%	1.8%	1.6%
European Union (EU-28)	1.6%	1.7%	1.7%	1.6%
Australia and New Zealand	2.1%	2.8%	2.8%	2.6%
Transition and developing economies	4.4%	4.8%	4.9%	4.8%
of which:				
Russian Federation	1.6%	1.7%	1.7%	1.6%
China	6.3%	6.1%	6.0%	5.7%
India	7.3%	7.5%	7.7%	7.7%
Africa	3.6%	3.8%	3.8%	4.1%
Latin America and the Caribbean	1.4%	2.4%	2.6%	2.8%

^a Calculations based on GDP at constant 2005 dollars

^b Forecasts

Source: IMF Datamapper, consulted in 03.10.2019

World population growth, 2019-2022 (annual percentage change)

Region	2019 ^b	2020 ^b	2021 ^b	2022 ^b
World	1.1%	1.1%	1.0%	1.0%
Africa	2.5%	2.5%	2.5%	2.4%
Asia	0.9%	0.8%	0.8%	0.8%
Europe	0.1%	0.0%	0.0%	-0.0%
Latin America and the Caribbean	0.9%	0.9%	0.9%	0.9%
North America	0.6%	0.6%	0.6%	0.6%
Oceania	1.4%	1.3%	1.3%	1.2%

^a Forecasts

Source: Interactive data, United Nations – DESA/Population division consulted in 03.10.2019

Maritime transports, ports and logistics

International seaborne trade (tonnes loaded)

	Containers	Other dry cargo except major bulk products	Major bulk products	Oil and gas	Total
Growth rate 2016-2017	5.8%	2.7%	5.1%	3.0%	4.0%
Effective annual rate 2012-2017	4.3%	1.9%	4.3%	2.1%	3.1%
Minimum range	4.3%	1.9%	4.3%	2.1%	3.1%
Maximum range	5.8%	2.7%	5.1%	3.0%	4.0%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

3.5%

Estimated annual average growth rate of international seaborne trade in tonnes loaded
(simple average considering the minimum and maximum values of the range presented)

World seaborne trade, by type of cargo, country group (tonnes)

Group of Countries		Goods unloaded (tonnes)			
		Total	Crude	Petroleum products and gas	Dry cargo
World	Growth rate 2016-2017	3.8%	2.3%	3.7%	4.2%
	Effective annual rate 2012-2017	3.0%	1.1%	4.0%	3.5%
	Minimum range	3.0%	1.1%	3.7%	3.5%
	Maximum range	3.8%	2.3%	4.0%	4.2%
Developed economies	Growth rate 2016-2017	-0.1%	-4.4%	0.2%	1.8%
	Effective annual rate 2012-2017	0.7%	-2.6%	-1.8%	3.0%
	Minimum range	-0.1%	-4.4%	-1.8%	1.8%
	Maximum range	0.7%	-2.6%	0.2%	3.0%
Transition Economies	Growth rate 2016-2017	11.9%	N/a	-25.0%	12.7%
	Effective annual rate 2012-2017	-14.9%	-23.4%	-5.6%	-15.0%
	Minimum range	-14.9%	-23.4%	-25.0%	-15.0%
	Maximum range	11.9%	-23.4%	-5.6%	12.7%
Developing economies	Growth rate 2016-2017	6.0%	8.9%	6.2%	5.3%
	Effective annual rate 2012-2017	4.8%	5.3%	9.2%	4.1%
	Minimum range	4.8%	5.3%	6.2%	4.1%
	Maximum range	6.0%	8.9%	9.2%	5.3%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

3.4%

Estimated annual average growth rate of world seaborne trade in tonnes unloaded
(simple average considering the minimum and maximum values of the range presented)

World seaborne trade, by type of cargo, region (tonnes)

Region		Goods unloaded (tonnes)			
		Total	Crude	Petroleum products and gas	Dry cargo
World	Growth rate 2016-2017	3.8%	2.3%	3.7%	4.2%
	Effective annual rate 2012-2017	3.0%	1.1%	4.0%	3.4%
	Minimum range	3.0%	1.1%	3.7%	3.4%
	Maximum range	3.8%	2.3%	4.0%	4.2%
Africa	Growth rate 2016-2017	1.4%	-12.8%	12.4%	0.5%
	Effective annual rate 2012-2017	4.9%	0.6%	12.3%	3.9%
	Minimum range	1.4%	-12.8%	12.3%	0.5%
	Maximum range	4.9%	0.6%	12.4%	3.9%
Americas	Growth rate 2016-2017	1.7%	-8.9%	-0.2%	6.6%
	Effective annual rate 2012-2017	-0.2%	-7.8%	2.6%	3.0%
	Minimum range	-0.2%	-8.9%	-0.2%	3.0%
	Maximum range	1.7%	-7.8%	2.6%	6.6%
Asia	Growth rate 2016-2017	5.3%	6.9%	4.5%	5.1%
	Effective annual rate 2012-2017	4.6%	4.9%	6.5%	4.2%
	Minimum range	4.6%	4.9%	4.5%	4.2%
	Maximum range	5.3%	6.9%	6.5%	5.1%
Europe	Growth rate 2016-2017	1.5%	1.2%	2.2%	1.4%
	Effective annual rate 2012-2017	1.2%	1.0%	-0.6%	1.7%
	Minimum range	1.2%	1.0%	-0.6%	1.4%
	Maximum range	1.5%	1.2%	2.2%	1.7%
Oceania	Growth rate 2016-2017	-1.7%	1.4%	15.3%	-5.5%
	Effective annual rate 2012-2017	-1.7%	-4.2%	0.3%	-1.5%
	Minimum range	-1.7%	-4.2%	-0.3%	-1.5%
	Maximum range	-1.7%	1.4%	15.3%	-5.5%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

3.4%

Estimated annual average growth rate of world seaborne trade in tonnes unloaded

(simple average considering the minimum and maximum values of the range presented)

Ownership of world fleet (DWT)

Beneficial Owner Location ^a	Growth rate 2017-2018	Effective annual rate 2013-2018	Minimum range	Maximum range
Greece	6.9%	6.2%	6.2%	6.9%
Japan	-0.1%	0.0%	-0.1%	0.0%
China	10.7%	-0.7%	-0.7%	10.7%
Germany	-4.4%	-3.2%	-4.4%	-3.2%
Singapore	-0.8%	10.1%	0.8%	10.1%
Hong Kong SAR (China)	4.5%	32.1%	4.5%	32.1%
South Korea	-4.6%	0.6%	-4.6%	0.6%
USA	2.7%	3.4%	2.7%	3.4%
Norway	14.6%	5.2%	5.2%	14.6%
United Kingdom	-2.3%	-0.1%	-2.3%	-0.1%
Bermuda	12.9%	10.5%	10.5%	12.9%
Taiwan	7.6%	2.6%	2.6%	7.6%
Denmark	7.9%	-0.7%	-0.7%	7.9%
Monaco	24.3%	33.8%	5.8%	33.8%
Turkey	-1.8%	-1.3%	-1.8%	-1.3%
Switzerland	4.7%	9.6%	4.7%	9.6%
Belgium	0.3%	22.0%	0.3%	22.0%
India	9.6%	2.1%	2.1%	9.6%
Russia	0.8%	2.8%	0.8%	2.8%
Italy	-4.2%	-4.9%	-4.9%	-4.2%
Top 20	4.1%	3.8%	3.8%	4.1%

a "Beneficial ownership location" indicates the country/economy in which the company that has the main commercial responsibility for the vessel is located

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

4.0%

Estimated annual average growth rate in dead weight of top 20 of countries in terms of ownership of world fleet

(simple average considering the minimum and maximum values of the range presented)

Flag of registration (number of vessels)

Flag of registration	Growth rate 2017-2018	Effective annual rate 2013-2018	Minimum range	Maximum range
Indonesia	3.1%	7.5%	3.1%	7.5%
Panama	-1.7%	-1.6%	-1.7%	-1.6%
Japan	0.2%	-0.3%	-0.3%	0.2%
China	7.5%	4.3%	4.3%	7.5%
Singapore	-0.9%	1.1%	-0.9%	1.1%
Liberia	0.8%	1.1%	0.8%	1.1%
Marshall Islands	6.9%	10.6%	6.9%	10.6%
Hong Kong SAR (China)	1.5%	3.3%	1.5%	3.3%
Malta	1.6%	4.2%	1.6%	4.2%
Rest of the World	0.5%	0.7%	0.5%	0.7%
World Total	1.1%	1.6%	1.1%	1.6%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

1.3%

Estimated annual average growth rate of flag of registration in number of vessels

(simple average considering the minimum and maximum values of the range presented)

Flag of registration (tonnes of Dead weight)

Flag of registration	Growth rate 2017-2018	Effective annual rate 2013-2018	Minimum range	Maximum range
Panama	-2.2%	-0.8%	-2.2%	-0.8%
Liberia	1.9%	2.5%	1.9%	2.5%
Marshall Islands	9.8%	11.2%	9.8%	11.2%
China, Hong Kong SAR	4.7%	6.9%	4.7%	6.9%
Singapore	2.9%	7.4%	2.9%	7.4%
Malta	9.6%	9.6%	9.6%	9.6%
Bahamas	-4.0%	0.8%	-4.0%	0.8%
China	7.4%	4.2%	4.2%	7.4%
Greece	-3.1%	-0.8%	-3.1%	-0.8%
United Kingdom	-59.1%	-4.5%	-59.1%	-4.5%
Rest of the world	11.3%	2.1%	2.1%	11.3%
World total	3.3%	3.4 %	3.3%	3.4%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

3.4%

Estimated annual average growth rate of flag of registration in tonnes of dead weight
(simple average considering the minimum and maximum values of the range presented)

Top 15 container terminals and their throughput

Port name	Country	Growth rate 2016-2017	Effective annual rate 2012-2017	Minimum range	Maximum range
Shanghai	China	8.3%	4.4%	4.4%	8.3%
Singapore	Singapore	9.0%	1.3%	1.3%	9.0%
Shenzhen	China	5.1%	1.9%	1.9%	5.1%
Ningbo	China	14.1%	9.4%	9.4%	14.1%
Hong Kong (China)	Hong Kong (China)	4.8%	-2.1%	-2.1%	4.8%
Busan	South Korea	7.8%	4.7%	4.7%	7.8%
Guangzhou	China	8.0%	6.7%	6.7%	8.0%
Qingdao	China	1.4%	4.7%	1.4%	4.7%
Dubai	UAE	4.5%	3.0%	3.0%	4.5%
Tianjin	China	5.0%	4.3%	4.3%	5.0%
Port Kelang	Malaysia	-8.4%	3.8%	-8.4%	3.8%
Rotterdam	Netherlands	9.8%	2.7%	2.7%	9.8%
Kaohsiung	Taiwan	-2.2%	1.1%	-2.2%	1.1%
Antwerp	Belgium	4.1%	4.0%	4.0%	4.1%
Xiamen	China	8.0%	7.6%	7.6%	8.0%
Total top 15		6.1%	3.3%	3.3%	6.1%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

4.7%

Estimated annual average growth rate of
throughput of top 15 of container terminals
(simple average considering the minimum and
maximum values of the range presented)

Shipbuilding, maintenance and equipment

Summary of activity in World Shipyards (CGT)

	Completions					
	World	China	South Korea	Japan	EU28 Norway	Others
Growth rate 2017-2018	-7.1%	-3.5%	-29.9%	10.9%	0.1%	11.4%
Effective annual rate 2013-2018	-3.3%	-3.1%	-9.3%	1.2%	2.8%	-0.5%
Minimum range	-7.1%	-3.5%	-29.9%	1.2%	0.1%	-0.5%
Maximum range	-3.3%	-3.1%	-9.3%	10.9%	2.8%	11.4%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

-5.2%

Estimated annual average growth rate of world shipyards completions in CGT

(simple average considering the minimum and maximum values of the range presented)

Completions by ship types (number)

Type	Growth rate 2017-2018	Effective annual rate 2014-2018	Minimum range	Maximum range
Tankers	1.6%	8.4%	1.6%	8.4%
Bulk carriers	-35.2%	-16.6%	-35.2%	-16.6%
Dry cargoes	8.6%	-3.5%	-3.5%	8.6%
Gas tankers	-11.4%	2.9%	-11.4%	2.9%
Ferries / passengers ships	60.8%	18.5%	18.5%	60.8%
Other non-cargo vessels	12.7%	-8.7%	-8.7%	12.7%
Total	2.1%	-5.0%	-5.0%	2.1%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

-1.4%

Estimated annual average growth rate of world ship completions in number

(simple average considering the minimum and maximum values of the range presented)

Sold for demolition reported tonnage, major vessel types

Type	Growth rate 2016-2017	Effective annual rate 2013-2017	Minimum range	Maximum range
Oil tankers	377.4%	0.6%	0.6%	377.4%
Dry cargoes	-48.6%	-10.5%	-48.6%	-10.5%
General cargo	12.6%	-14.6%	-14.6%	12.6%
Container ships	-40.5%	-3.7%	-40.5%	-3.7%
Gas carriers	-2.5%	0.3%	-2.5%	0.3%
Chemical tankers	-13.3%	-2.6%	-13.3%	-2.6%
Offshore	15.6%	-3.7%	-3.7%	15.6%
Ferries and passenger ships	66.9%	-3.7%	-3.7%	66.9%
Others	-27.6%	8.3%	-27.6%	8.3%
Total	-20.9%	-5.8%	-20.9%	-5.8%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

-13.3%

Estimated annual average growth rate of tonnage
reported sold for demolition

(simple average considering the minimum and
maximum values of the range presented)

Offshore Energy

Global cumulative offshore wind capacity

Country	Growth rate 2017-2018	Effective annual rate 2013-2018	Minimum range	Maximum range
United Kingdom	19.7%	16.7%	19.7%	16.7%
Germany	17.9%	65.1%	17.9%	65.1%
China	64.6%	60.7%	60.7%	64.6%
Denmark	4.8%	0.9%	0.9%	4.8%
Netherlands	0.0%	35.3%	0.0%	35.3%
Belgium	35.2%	15.7%	15.7%	35.2%
USA	0.0%	331.7%	0.0%	331.7%
South Korea	92.1%	71.0%	71.0%	92.1%
Other	-0.8%	8.1%	-0.8%	8.1%
Total	24.0%	26.8%	24.0%	26.8%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

25.4%

Estimated annual average growth rate of global cumulative offshore wind capacity

(simple average considering the minimum and maximum values of the range presented)

Top 25 producing countries of offshore Oil & Gas (bbl)

Country	Growth rate 2017-2018	Effective annual rate 2013-2018	Minimum range	Maximum range
Saudi Arabia	6.4%	5.1%	5.1%	6.4%
Qatar	-0.5%	-0.1%	-0.5%	-0.1%
Norway	-3.8%	1.2%	-3.8%	1.2%
Iran	12.8%	13.1%	12.8%	13.1%
Brazil	-1.8%	5.6%	-1.8%	5.6%
USA	0.8%	2.6%	0.8%	2.6%
UAE	7.5%	2.7%	2.7%	7.5%
Mexico	-6.0%	-4.9%	-6.0%	-4.9%
Australia	18.7%	9.1%	9.1%	18.7%
United Kingdom	5.7%	4.1%	4.1%	5.7%
Malaysia	-2.1%	0.5%	-2.1%	0.5%
Nigeria	-5.4%	-2.8%	-5.4%	-2.8%
Angola	-8.3%	-2.9%	-8.3%	-2.9%
China	-0.5%	2.4%	-0.5%	2.4%
Azerbaijan	1.6%	-1.1%	-1.1%	1.6%
Russia	12.1%	10.3%	10.3%	12.1%
Indonesia	-1.1%	-2.4%	-2.4%	-1.1%
Egypt	30.9%	-0.4%	-0.4%	30.9%
India	-1.4%	-0.4%	-1.4%	-0.4%
Thailand	-4.7%	-0.6%	-4.7%	-0.6%
Trinidad and Tobago	6.7%	-2.9%	-2.9%	6.7%
Vietnam	-4.2%	-2.0%	-4.2%	-2.0%
Equatorial Guinea	-10.2%	-4.9%	-10.2%	-4.9%
Venezuela	-30.2%	-12.7%	-30.2%	-12.7%
Netherlands	-9.8%	-8.1%	-9.8%	-8.1%
Other Countries	1.5%	0.0%	0.0%	1.5%
Total	1.7%	1.7%	1.7%	1.7%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

1.7%

Estimated annual average growth rate of producing
of offshore oil and gas

(simple average considering the minimum and
maximum values of the range presented)

Fisheries and aquaculture

World fisheries and aquaculture production (tonnes)

Production	Growth rate 2015-2016	Effective annual rate 2011-2016	Minimum range	Maximum range
Inland				
Capture	1.8%	1.6%	1.6%	1.8%
Aquaculture	5.8%	5.9%	5.8%	5.9%
Total Inland	5.0%	5.0%	5.0%	5.0%
Marine				
Capture	-2.3%	-0.5%	-2.3%	-0.5%
Aquaculture	5.5%	4.6%	4.6%	5.5%
Total Marine	-0.4%	0.7%	-0.4%	0.7%
Total Capture	-1.8%	-0.3%	-1.8%	-0.3%
Total Aquaculture	5.7%	5.4%	5.4%	5.7%
Total world fisheries	1.5%	2.2%	1.5%	2.2%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

1.8%

Estimated annual average growth rate of world fisheries and aquaculture production in tonnes

(simple average considering the minimum and maximum values of the range presented)

World fisheries and aquaculture utilization (tonnes)

Utilisation	Growth rate 2015-2016	Effective annual rate 2011-2016	Minimum range	Maximum range
Human consumption	1.9%	3.1%	1.9%	3.1%
Non-food uses	-3.0%	-3.9%	-3.9%	-3.0%
Population (Billions)	1.4%	1.1%	1.1%	1.4%
Per capita food fish supply per capita (Kg)	0.5%	1.9%	0.5%	1.9%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

2.5%

Estimated annual average growth rate of world fisheries and aquaculture human consumption in tonnes in tonnes

(simple average considering the minimum and maximum values of the range presented)

Marine capture fisheries: major producer countries (tonnes)

2016 Ranking	Country	Growth rate 2015-2016	Effective annual rate 2011-2016	Minimum range	Maximum range
1	China	-0.4%	2.5%	-0.4%	2,5%
2	Indonesia	-1.7%	2.9%	-1.8%	2,9%
3	USA	-2.4%	-0.8%	-2.4%	-0,8%
4	Russia	7.1%	2.2%	2.2%	7,2%
5	Peru	-21.2%	-14.4%	-21.3%	-14,4%
6	India	2.9%	1.8%	1.8%	2,9%
7	Japan	-7.5%	-3.0%	-7.3%	-3,0%
8	Vietnam	2.7%	3.1%	2.7%	3,1%
9	Norway	-11.3%	-2.5%	-11.4%	-2,5%
10	Philippines	-4.3%	-3.2%	-4.1%	-3,2%
11	Malaysia	5.9%	2.3%	2.3%	5,4%
12	Chile	-16.1%	-13.5%	-16.2%	-13,5%
13	Morocco	6.1%	7.4%	5.9%	7,4%
14	South Korea	-16.0%	-4.1%	-15.9%	-4,1%
15	Thailand	2.0%	-3.5%	-3.5%	1,5%
16	Mexico	-0.3%	-2.7%	-2.7%	-0,8%
17	Myanmar	7.1%	-11.6%	-11.6%	7,2%
Total 17 major countries		-2.9%	-1.6%	-2.9%	-1.6%
Rest of the world		-1.1%	1.5%	-1.1%	1.5%
World total		-2.4%	-0.8%	-2.4%	-0.8%
Share 17 major countries (%)		-0.5%	-0.8%	-0.8%	-0.5%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

-1.6%

Estimated annual average growth rate of marine capture in tonnes

(simple average considering the minimum and maximum values of the range presented)

Aquaculture production, by country (tonnes)

2016 Ranking	Country	Growth rate 2015-2016	Effective annual rate 2011-2016	Minimum range	Maximum range
1	China	1.8%	1.1%	1.1%	1,8%
2	India	8.6%	5.9%	5.9%	8,6%
3	Bangladesh	2.4%	-1.0%	-1.0%	2,4%
4	Myanmar	2.7%	-5.9%	-5.9%	2,7%
5	Cambodia	4.5%	4.9%	4.5%	4,9%
6	Indonesia	-8.5%	1.6%	-8.5%	1,6%
7	Uganda	-1.8%	-0.6%	-1.8%	-0,6%
8	Nigeria	11.9%	4.7%	4.7%	11,9%
9	United Republic of Tanzania	1.0%	0.8%	0.8%	1,0%
10	Egypt	-4.2%	-5.1%	-5.1%	-4,1%
Total 10 main countries		2.8%	0.7%	0.7%	2.7%
Rest of the world		0.3%	1.5%	0.3%	1.5%
World total		2.0%	0.9%	0.9%	2.0%
Weight 10 main countries (percentage)		0.8%	-0.3%	-0.3%	0.8%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

1.5%

Estimated annual average growth rate of
aquaculture production in tonnes
(simple average considering the minimum and
maximum values of the range presented)

Aquaculture - Main producers of farmed aquatic animals (tonnes)

Country	Growth rate 2014-2016	Effective annual rate 2010-2016	Minimum range	Maximum range
China	4.1%	5.0%	4.1%	5.0%
India	8.1%	7.1%	7.1%	8.1%
Indonesia	7.9%	13.6%	7.9%	13.6%
Vietnam	3.3%	5.1%	3.3%	5.1%
Bangladesh	6.1%	9.1%	6.1%	9.1%
Norway	-0.3%	4.5%	-0.3%	4.5%
Chile	-7.7%	6.7%	-7.7%	6.7%
Egypt	9.8%	6.9%	6.9%	9.8%
Top 8 subtotal	4.5%	5.8%	4.5%	5.8%
Rest of the World	2.1%	1.8%	1.8%	2.1%
World	4.1%	5.2%	4.1%	5.2%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

4.7%

Estimated annual average growth rate of farmed
aquatic animals in tonnes

(simple average considering the minimum and
maximum values of the range presented)

Entertainment, sports, tourism and culture

Revenue of the cruise industry worldwide (USD)

Growth rate 2016-2017	6.5%
Effective annual rate 2012-2017	1.8%
Minimum range	1.8%
Maximum range	6.5%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

4.1%

Estimated annual average growth rate of revenue
of the cruise industries worldwide in USD

(simple average considering the minimum and
maximum values of the range presented)

Number of cruise passengers, globally, in millions

Growth rate 2017-2018	5.6%
Effective annual rate 2013-2018	5.8%
Minimum range	5.6%
Maximum range	5.8%

Source: PwC calculation based on the information included in "Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020"

5.7%

Estimated annual average growth rate of number of
cruise passengers, globally, in millions
(simple average considering the minimum and
maximum values of the range presented)

Methodological Note

The growth rates presented in the maximum and minimum of the growth rate range for the variable presented result from the calculation of the annual effective rate for the periods indicated, using the Circumnavigation document as the data source: Circumnavigation HELM - PwC Economy of Sea Barometer (World), In detail, January 2020, In detail, January 2020.



Environmental preservation gives value to the sea!



Contribute to a culture of safety at sea! In leisure or work. Follow the safety rules for lives at sea. Go to sea and return safely.

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"Compass – PwC Forward-Looking Blue Arena" is a forward-looking leadership forum about the oceans, organized in the following relevant subjects, ocean leaders express their views about what is expected for the next 12 months (year 2019) on sea activities:

- Governance and Ocean Integrated Approach;
- Finances and Economics;
- Environment;
- Knowledge and Innovation; and
- People, Culture and Identity.

This publication aims to carry out the exercise of calculating the growth rates of the various variables of the economy of the sea, in order to provide the "Compass - PwC Forward-Looking Blue Arena" forum with quantitative information to assist in the debate on Finance and Economics, which will be the future of the oceans.

Please see PwC social responsibility and thought leadership projects about the economy of the sea in <http://www.pwc.pt/en/issues/economy-of-the-sea.html>

